IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1. (Currently Amended) A photoelectric conversion device having a plurality of pixel cells each of which includes a photoelectric conversion element, a field effect transistor having ~~the~~ a gate area for storing signal charge generated by said photoelectric conversion element and ~~the~~ a source-drain path for outputting a signal corresponding to the signal charge stored in the gate, a first power supply line for supplying electric power to said field effect transistor, and a first switch connected between said field effect transistor and said first power supply line, ~~said device is characterized in that,~~

wherein, when a reset voltage for resetting the gate of said field effect transistor is V_{sig0}, a threshold voltage of said field effect transistor is V_{th}, current flowing through said field effect transistor is I_a, a voltage applied via said first power supply line is V_{cl}, and a series resistance of said first switch is R_{on}, each pixel cell satisfies a condition determined by

$$V_{cl} - R_{on} \times I_a > V_{sig0} - V_{th} .$$

2. (Original) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor, and said first switch and said second switch are field effect transistors having different threshold voltages from each other.

3. (Currently Amended) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch have channel regions and wherein said first and second switches are made to have different threshold voltages by making said channel regions of said first switch and said second switch have different impurity concentrations from each other.

4. (Currently Amended) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch have well regions and wherein said first switch and said second switch are made to have different threshold voltages by making said well regions of said first switch and said second switch have different impurity concentrations from each other.

5. (Currently Amended) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch have gate dielectric films and wherein said first switch and said second switch are made to have different threshold voltages by making said gate dielectric films of said first switch and said second switch have different thickness from each other.

6. (Currently Amended) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch have gate dielectric films and wherein said first switch and said second switch are made to have different threshold voltages by making said gate dielectric films of said first switch and said second switch with different materials having different dielectric constants from each other.

7. (Original) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch are formed on different well regions which are isolated from each other, and said first switch and said second switch are made to have different threshold voltages by applying different voltages to said respective well regions.

8. (Original) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch are insulated-gate field effect transistors, and said first switch and said second switch are made to have different threshold voltages

by making said first switch and said second switch have different gate lengths from each other.

9. (Original) The photoelectric conversion device according to claim 2, wherein said first switch and said second switch are insulated-gate field effect transistors, and said first switch and said second switch are made to have different threshold voltages by making said first switch and said second switch have different gate widths from each other.

10. (Original) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor, said first switch and said second switch are field effect transistors, and different voltages are applied to gates of said first switch and said second switch.

11. (Currently Amended) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor and a second power supply line for supplying electric power of a voltage[[,]] different from the voltage applied via said first power supply line[[,]] to said second switch, and said first switch and said second switch are field effect transistors.

12. (Original) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor and a capacitor formed between said second switch and the gate area of said field effect transistor, and the gate voltage of said field effect transistor is controlled via said capacitor.

13. (Currently Amended) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor and a third switch connected between said photoelectric conversion element and an intersection of said second switch and the gate area of said field effect transistor, and ~~capacitance of~~ the gate area of said field effect transistor ~~is set~~ has a lower ~~than~~ capacitance [[of]] than does said photoelectric conversion element.

14. (Original) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor, and said first switch and said second switch are field effect transistors, and, when mobility is μ, capacitance of gate oxide per unit area is Cox, gate width is W, and gate length is L in said first switch, and $K = 1/2 \times \mu \times Cox \times W/L$, a threshold voltage of said second switch is V_{th0}, a threshold voltage of said first switch is V_{th1}, the gate voltage of said second switch is V2, and the gate voltage of said first switch is V3, then[[,]] each pixel cell satisfies a condition determined by

$$V3 - V_{th1} - (I_a/K)^{1/2} > V2 - V_{th0} - V_{th}.$$

15. (Currently Amended) The photoelectric conversion device according to claim 14, wherein the gate voltage V2 of said second switch and the gate voltage V3 of said first switch are controlled to be equal, and the threshold voltage V_{th} of said field effect transistor, the threshold voltage V_{th0} of said second switch and the threshold voltage V_{th1} of said first switch are set to be equal.

16. (Currently Amended) The photoelectric conversion device according to claim 14, wherein the gate voltage V2 of said second switch and the gate voltage V3 of

said first switch are controlled to be equal, and the threshold voltage V_{th0} of said second switch is set to be different from the threshold voltage V_{th1} of said first switch ~~are set equal~~.

17. (Currently Amended) The photoelectric conversion device according to claim 14, wherein the gate voltage V2 of said second switch is controlled to be different from the gate voltage V3 of said first switch, and the threshold voltage V_{th0} of said second switch is set to be different from the threshold voltage V_{th1} of said first switch are set equal.

18. (Original) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor, and said first switch and said second switch are field effect transistors, and, when mobility is μ, capacitance of gate oxide per unit area is Cox, gate width is W, and gate length is L in said first switch, and $K = 1/2 \times \mu \times Cox \times W/L$, a threshold voltage of said second switch is V_{th0}, a threshold voltage of said first switch is V_{th1}, the gate voltage of said second switch is V2, and the gate voltage of said first switch is V3, then[[,]] each pixel cell satisfies a condition determined by

$$V3 - V_{th1} - (I_a/K + (V3 - V_{c1} - V_{th1})^2)^{1/2}$$
$$> V2 - V_{th0} - V_{th1}.$$

19. (Currently Amended) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor and a second power supply line for supplying electric power of a voltage[[,]] different from the voltage applied via said first power supply line, and said first switch and said second switch are field effect transistors, and, when mobility is μ, capacitance of gate oxide per unit area is Cox, gate width is W, and gate length is L in said first switch, and $K = 1/2 \times \mu \times Cox \times W/L$, a threshold voltage of said second switch is V_{th0}, a threshold voltage of said first switch is V_{th1}, the gate voltage of

said second switch is V2, the gate voltage of said first switch is V3, and the voltage applied via said second power supply line is V_{c2}, then[[,]] each pixel cell satisfies a condition determined by

$$V3 - V_{th1} - (I_a/K)^{1/2} > V_{c2} - V_{th}$$

where $V_{c2} \leq V2 - V_{th0}$.

20. (Currently Amended) The photoelectric conversion device according to claim 1, wherein each of said pixel cells further comprises a second switch for resetting said gate area of said field effect transistor and a second power supply line for supplying electric power of a voltage[[,]] different from the voltage applied via said first power supply line, and said first switch and said second switch are field effect transistors, and, when mobility is μ, capacitance of gate oxide per unit area is Cox, gate width is W, and gate length is L in said first switch, and $K = 1/2 \times \mu \times Cox \times W/L$, a threshold voltage of said second switch is V_{th0}, a threshold voltage of said first switch is V_{th1}, the gate voltage of said second switch is V2, the gate voltage of said first switch is V3, and the voltage applied via said second power supply line is V_{c2}, then[[,]] each pixel cell satisfies a condition determined by

$$V3 - V_{th1} - (I_a/K + (V3 - V_{cl} - V_{th1})^2)^{1/2} > V_{c2} - V_{th}$$

where $V_{c2} \leq V2 - V_{th0}$.

21. - 32. (Canceled)